UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
LOO, JUVENA W

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/743,831	OMAE ET AL.
	Examiner	Art Unit	
	Juvena Loo	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 January 2008_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-8_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-8_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

Claim Objections

1.   Claims 1, 3, 4, 6, and 7 are objected to because of the following informalities: In particular, claims 1, 3, 4, 6, and 7 are objected to because they include reference characters, c/o, which are not enclosed within parentheses. Appropriate correction is required.

2.   Claim 8 is objected to because of the following informalities: In particular, claim 8 is objected to because it contains the word "top" in "top generate paging area information by a set of said prefixes included in the extracted combinations". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1 - 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. (Patent No. US 7,123,599 B2) in view of Klinker et al. (US 2003/0088671 A1).

        Yano et al. discloses a mobile data communication system capable of shortening the interruption time of communication comprising:

Regarding claim 1, *a mobility management node comprising:*

mobility management means for correlating a home address in a home network of a mobile node with a c/o address in a network where the mobile node is located after movement (Yano: see Figure 6 and "In FIG. 6, number al 601...terminal 105 has moved" in column 9 lines 22 - 44);

binding storing means for storing the home address and the c/o address of the mobile node correlated with each other by the mobility management means (Yano: see Figure 6 and "In FIG. 6, number al 601...terminal 105 has moved" in column 9 lines 22 – 44);

transition detecting means for monitoring transition of the c/o address stored in the binding storing means, and for detecting a prefix of the c/o address before the transition and a prefix of the c/o address after the transition (Yano: see "bits of a predetermined section of...common prefix address" in column 3, lines 54 – 63);

paging area forming means for extracting predetermined combinations of the prefix of the c/o address before the transition with the prefix of the c/o address after the transition, stored by the transition history storing means (Yano: see "bits of a predetermined section of...common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105...the routing header address in the HA device 101" in column 10, lines 14 – 29), *and for generating paging area information by a set of said prefixes included in the extracted combinations* (Yano: see "bits of a predetermined

section of...common prefix address" in column 3, lines 54 – 63; see also Figure 6 and

"In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 – 45; see also

"If the mobile terminal 105...the routing header address in the HA device 101" in column

10, lines 14 – 29);

paging area notifying means for notifying the mobile node of the paging area

information generated by the paging area forming means (Yano: see "bits of a

predetermined section of...common prefix address" in column 3, lines 54 – 63; see also

Figure 6 and "In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 –

45; see also "If the mobile terminal 105...the routing header address in the HA device

101" in column 10, lines 14 – 29).

However, Yano does not disclose the feature: *transition history storing means for*

storing a transition frequency of the c/o address in correlation with the prefix of the c/o

address before the transition and the prefix of the c/o address after the transition

detected by the transition detecting means.

Klinker et al. discloses a system and a method for controlling routing of data over

multiple networks comprising the feature:

transition history storing means for storing a transition frequency of the c/o

address in correlation with the prefix of the c/o address before the transition and the

prefix of the c/o address after the transition detected by the transition detecting means

(Klinker: see "FIG. 5 illustrates a functional block...for reporting and analysis purpose" in

page 9, sections 0094 - 0095).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Yano et al. by using the feature, as taught by Klinker et al., in order to monitor the traffic flow (Klinker: see "each monitored traffic...prefix or address" in page 9, section 0091).

Regarding claim 2, *wherein the paging area forming means extracts combinations of the prefix before the transition with the prefix after the transition with each of which a transition frequency over a predetermined reference value is correlated among the transition frequencies stored by the transition history storing means, out of the extracted combinations* (Klinker: see "FIG. 5 illustrates a functional block...for reporting and analysis purpose" in page 9, sections 0094 - 0095), *and*

generates the paging area information by a set of the prefixes included in the combinations finally extracted (Yano: see "bits of a predetermined section of...common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105...the routing header address in the HA device 101" in column 10, lines 14 – 29)

Regarding claim 3, *further comprising:*

registration time interval measuring means for measuring a registration time interval during which an address of the mobile node is continuously registered in the binding storing means (Yano: see Figure 6, 604; see also "Numeral 604…the lifetime is erased" in column 9, line 32 – 36); *and*

update frequency measuring means for measuring an update frequency of the c/o address of the mobile node stored in the binding storing means (Klinker: see "FIG. 5 illustrates a functional block…for reporting and analysis purpose" in page 9, sections 0094 - 0095);

wherein the paging area forming means uses a plurality of predetermined reference values different from each other to generate the paging area information as to each of the plurality of predetermined reference values, thereby generating a plurality of paging area information items (Yano: see "bits of a predetermined section of …common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601…the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105…the routing header address in the HA device 101" in column 10, lines 14 – 29), *and*

wherein the paging area notifying means derives an update frequency per unit time of the c/o address of the mobile node, based on the registration time interval of the mobile node measured by the registration time interval measuring means and the update frequency of the mobile node measured by the update frequency measuring means, and notifies the mobile node of a paging area information item selected out of

the plurality of paging area information items in accordance with the update frequency

per unit time of the c/o address of the mobile node, based on a predetermined rule

defined so that a number of prefixes included in the paging area information increases

against increase of the update frequency per unit time of the c/o address (Yano: see

"bits of a predetermined section of …common prefix address" in column 3, lines 54 –

63; see also Figure 6 and "In FIG. 6, numeral 601…the mobile terminal 105" in column

9, lines 23 – 45; see also "If the mobile terminal 105…the routing header address in the

HA device 101" in column 10, lines 14 – 29. See also Klinker: see "FIG. 5 illustrates a

functional block…for reporting and analysis purpose" in page 9, sections 0094 - 0095).

Regarding claim 4, a paging area forming method comprising:

a mobility management step wherein mobility management means correlates a

home address in a home network of a mobile node with a c/o address in a network

where the mobile node is located after movement (Yano: see Figure 6 and "In FIG. 6,

numeral 601…the mobile terminal 105" in column 9, lines 23 – 45), and stores the

addresses in correlation with each other into binding storing means (Yano: Figure 6 and

"In FIG. 6, numeral 601…the mobile terminal 105" in column 9, lines 23 – 45);

a transition detecting step wherein transition detecting means monitors transition

of the c/o address stored in the binding storing means, detects a prefix of the c/o

address before the transition and a prefix of the c/o address after the transition (Yano:

see "bits of a predetermined section of ...common prefix address" in column 3, lines 54 – 63).

a paging area forming step wherein paging area forming means extracts predetermined combinations of the prefix of the c/o address before the transition with the prefix of the c/o address after the transition, stored in the transition history storing means (Yano: see "bits of a predetermined section of ...common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105...the routing header address in the HA device 101" in column 10, lines 14 – 29), and generates paging area information by a set of the prefixes included in the extracted combinations (Yano: see "bits of a predetermined section of...common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105...the routing header address in the HA device 101" in column 10, lines 14 – 29); and

a paging area notifying step wherein paging area notifying means notifies the mobile node of the paging area information generated by the paging area forming means (Yano: see "bits of a predetermined section of...common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105...the routing header address in the HA device 101" in column 10, lines 14 – 29).

However, Yano does not disclose the feature: *lets transition history storing means store a transition frequency of the c/o address in correlation with the prefix of the c/o address before the transition and the prefix of the c/o address after the transition.*

Klinker et al. discloses a system and a method for controlling routing of data over multiple networks comprising the feature:

lets transition history storing means store a transition frequency of the c/o address in correlation with the prefix of the c/o address before the transition and the prefix of the c/o address after the transition (Klinker: see "FIG. 5 illustrates a functional block...for reporting and analysis purpose" in page 9, sections 0094 - 0095).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Yano et al. by using the feature, as taught by Klinker et al., in order to monitor the traffic flow (Klinker: see "each monitored traffic...prefix or address" in page 9, section 0091).

Regarding claim 5, *wherein in the paging area forming step the paging area forming means extracts combinations of the prefix before the transition with the prefix after the transition with each of which a transition frequency over a predetermined reference value is correlated among the transition frequencies stored by the transition history storing means, extracts combinations having the common prefixes, out of the extracted combinations* (Klinker: see "FIG. 5 illustrates a functional block...for reporting and analysis purpose" in page 9, sections 0094 - 0095), *and*

generates the paging area information by a set of the prefixes included in the

combinations finally extracted (Yano: see "bits of a predetermined section of...common

prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral

601...the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile

terminal 105...the routing header address in the HA device 101" in column 10, lines 14

– 29).

Regarding claim 6, further comprising a registration time interval measuring step

wherein registration time interval measuring means measures a registration time

interval during which an address of the mobile node is continuously registered in the

binding storing means (Yano: see Figure 6, 604; see also "Numeral 604...the lifetime is

erased" in column 9, line 32 – 36); and

an update frequency measuring step wherein update frequency measuring

means measures an update frequency of the c/o address of the mobile node stored in

the binding storing means (Klinker: see "FIG. 5 illustrates a functional block...for

reporting and analysis purpose" in page 9, sections 0094 - 0095);

wherein in the paging area forming step the paging area forming means uses a

plurality of predetermined reference values different from each other to generate the

paging area information as to each of the plurality of predetermined reference values,

thereby generating a plurality of paging areas (Yano: see "bits of a predetermined

section of ...common prefix address" in column 3, lines 54 – 63; see also Figure 6 and

"In FIG. 6, numeral 601...the mobile terminal 105" in column 9, lines 23 – 45; see also

"If the mobile terminal 105...the routing header address in the HA device 101" in column

10, lines 14 – 29), *and*

wherein in the paging area notifying step the paging area notifying means derives

an update frequency per unit time of the c/o address of the mobile node, based on the

registration time interval of the mobile node measured by the registration time interval

measuring means and the update frequency of the mobile node measured by the

update frequency measuring means, and notifies the mobile node of a paging area

information item selected out of the plurality of paging area information items in

accordance with the update frequency per unit time of the c/o address of the mobile

node, based on a predetermined rule defined so that a number of prefixes included in

the paging area information increases against increase of the update frequency per unit

time of the c/o address (Yano: see "bits of a predetermined section of ...common prefix

address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601...the

mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal

105...the routing header address in the HA device 101" in column 10, lines 14 – 29.

See also Klinker: see "FIG. 5 illustrates a functional block...for reporting and analysis

purpose" in page 9, sections 0094 - 0095).

Regarding claim 7, *a computer readable medium including computer program instructions, which cause a computer to execute a method of mobility management, comprising:*

correlating a home address in a home network of a mobile node with a c/o address in a network where the mobile node is located after movement (Yano: see Figure 6 and "In FIG. 6, number al 601…terminal 105 has moved" in column 9 lines 22 - 44);

storing the home address and the c/o address of the mobile node correlated with each other by the mobility management means (Yano: see Figure 6 and "In FIG. 6, number al 601…terminal 105 has moved" in column 9 lines 22 - 44);

monitoring transition of the stored c/o address (Yano: see Figure 6 and "In FIG. 6, number al 601…terminal 105 has moved" in column 9 lines 22 - 44);

detecting a prefix of the c/o address before the transition and a prefix of the c/o address after the transition (Yano: see "bits of a predetermined section of …common prefix address" in column 3, lines 54 – 63);

extracting predetermined combinations of the prefix of the c/o address before the transition with the prefix of the c/o address after the transition, stored in the storing a transition frequency step (Yano: see "bits of a predetermined section of …common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601…the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile

terminal 105...the routing header address in the HA device 101" in column 10, lines 14
– 29);

generating paging area information by a set of said prefixes included in the

extracted combinations (Yano: see "bits of a predetermined section of ...common prefix

address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601...the

mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal

105...the routing header address in the HA device 101" in column 10, lines 14 – 29);

and

notifying the mobile node of the paging area information generated (Yano: see

"bits of a predetermined section of ...common prefix address" in column 3, lines 54 –

63; see also Figure 6 and "In FIG. 6, numeral 601...the mobile terminal 105" in column

9, lines 23 – 45; see also "If the mobile terminal 105...the routing header address in the

HA device 101" in column 10, lines 14 – 29).

However, Yano does not disclose the feature: storing a transition frequency of

the c/o address in correlation with the prefix of the c/o address before the transition and

the prefix of the c/o address.

Klinker et al. discloses a system and a method for controlling routing of data over

multiple networks comprising the feature:

storing a transition frequency of the c/o address in correlation with the prefix of

the c/o address before the transition and the prefix of the c/o address (Klinker: see "FIG.

5 illustrates a functional block...for reporting and analysis purpose" in page 9, sections 0094 - 0095).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Yano et al. by using the feature, as taught by Klinker et al., in order to monitor the traffic flow (Klinker: see "each monitored traffic...prefix or address" in page 9, section 0091).

Regarding claim 8, *a mobility management node comprising:*

Mobility management unit configured to correlate a home address in a home network of a mobile node with a c/o address in a network where the mobile node is located after movement (Yano: see Figure 6 and "In FIG. 6, number al 601...terminal 105 has moved" in column 9 lines 22 - 44);

a first memory configured to store the home address and the c/o address of the mobile node correlated with each other by the mobility management unit (Yano: see Figure 6 and "In FIG. 6, number al 601...terminal 105 has moved" in column 9 lines 22 - 44);

transition detecting unit configured to monitor transition of the c/o address stored in the first memory, and for detecting a prefix of the c/o address before the transition and a prefix of the c/o address after the transition (Yano: see "bits of a predetermined section of ...common prefix address" in column 3, lines 54 – 63);

paging area forming unit configured to extract predetermined combinations of the prefix of the c/o address before the transition with the prefix of the c/o address after the transition, stored by the second memory, and top generate paging area information by a set of said prefixes included in the extracted combinations (Yano: see "bits of a predetermined section of …common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601…the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105…the routing header address in the HA device 101" in column 10, lines 14 – 29)*; and*

an interface configured to notify the mobile node of the paging area information generated by the paging area forming unit (Yano: see "bits of a predetermined section of …common prefix address" in column 3, lines 54 – 63; see also Figure 6 and "In FIG. 6, numeral 601…the mobile terminal 105" in column 9, lines 23 – 45; see also "If the mobile terminal 105…the routing header address in the HA device 101" in column 10, lines 14 – 29)*.*

However, Yano does not disclose the feature: *a second memory configured to store a transition frequency of the c/o address in correlation with the prefix of the c/o address before the transition and the prefix of the c/o address after the transition detected by the transition detecting unit.*

Klinker et al. discloses a system and a method for controlling routing of data over multiple networks comprising the feature:

a second memory configured to store a transition frequency of the c/o address in

correlation with the prefix of the c/o address before the transition and the prefix of the

c/o address after the transition detected by the transition detecting unit (Klinker: see

"FIG. 5 illustrates a functional block...for reporting and analysis purpose" in page 9,

sections 0094 - 0095).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the system of Yano et al. by using the feature, as taught by Klinker

et al., in order to monitor the traffic flow (Klinker: see "each monitored traffic...prefix or

address" in page 9, section 0091).

Response to Arguments

5.   Applicant's arguments with respect to claims 1, 4, and 7 have been considered

but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Juvena Loo whose telephone number is (571)270-1974.

The examiner can normally be reached on Monday - Friday: 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Juvena Loo/
Examiner, Art Unit 2616
March 28, 2008

/Kwang B. Yao/

Supervisory Patent Examiner, Art Unit 2616